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10/708,638	03/17/2004	Chi-Yang Lin	VIAP0101USA	2637
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NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			EXAMINER PIZIALI, JEFFREY J	
			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/708,638	Applicant(s) LIN ET AL.	
	Examiner Jeff Piziali	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 December 2007 and 27 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-11 and 13-18 is/are pending in the application.
- 4a) Of the above claim(s) 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7-11 and 13-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The disclosure is objected to because of the following informalities: "*mirror ration*" should be changed to "*mirror ratio*" (see Paragraph 21, Line 2 of the original specification and the replacement paragraph filed 25 December 2007). Appropriate correction is required.

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicants' cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1, 3-5, 7-11, and 13-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 1 recites the limitation "a different magnitude" in line 13 and the limitation "adjusting the output current to drive the display driving voltage" in lines 16-17. There is insufficient antecedent basis for these limitations in the claim.

For instance, the concept of "a magnitude" is nowhere earlier recited in the claim. Therefore, it would be unclear to one having ordinary skill in the art what precisely the claimed "different magnitude" is different from.

Furthermore, although the claim earlier recites the subject matter of "the output current being delivered to the monitor for generating the display driving voltage" (in lines 7-8); it would be unclear to an artisan what is meant by the phrase, "adjusting the output current to drive the display driving voltage." There appears to be no antecedent basis of support for an output current driving the display driving voltage.

7. Claim 1 is further rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

One omitted structural cooperative relationship is between "the plurality of mirror currents each have[ing] a different magnitude" (in lines 12-13). As mentioned above, it would be unclear to one having ordinary skill in the art what precise element the claimed "different magnitude" is different from.

Another omitted structural cooperative relationship is between "the output current being delivered to the monitor for generating the display driving voltage" (in lines 7-8). As mentioned

above, it would be unclear to an artisan what is meant by the phrase, "adjusting the output current to drive the display driving voltage." How does a current drive a voltage?

8. Claim 1 is indefinite where it specifies "*predetermined display driving voltage*" (see lines 16-18) since "*predetermined*," according to Applicants' definition, merely means determined beforehand. The use of "*predetermined*" has been held to be indefinite in a claim where it simply means determined beforehand, *Joseph E. Scagram & Sons, Inc. V. Marzall*, Comr. Pats., 84 USPQ 180 (Court of Appeals, District of Columbia).

9. Claim 11 recites the limitation "a different magnitude" in line 8 and the limitation "adjusting the output current to drive the display driving voltage" in lines 11-12. There is insufficient antecedent basis for these limitations in the claim.

For instance, the concept of "a magnitude" is nowhere earlier recited in the claim. Therefore, it would be unclear to one having ordinary skill in the art what precisely the claimed "different magnitude" is different from.

Furthermore, although the claim earlier recites the subject matter of "the output current being used for generating the display driving voltage" (in lines 3-4); it would be unclear to an artisan what is meant by the phrase, "adjusting the output current to drive the display driving voltage." There appears to be no antecedent basis of support for an output current driving the display driving voltage.

10. Claim 11 is further rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

One omitted structural cooperative relationship is between "the plurality of mirror currents each have[ing] a different magnitude" (in lines 7-8). As mentioned above, it would be unclear to one having ordinary skill in the art what precise element the claimed "different magnitude" is different from.

Another omitted structural cooperative relationship is between "the output current being delivered to the monitor for generating the display driving voltage" (in lines 11-12). As mentioned above, it would be unclear to an artisan what is meant by the phrase, "adjusting the output current to drive the display driving voltage." How does a current drive a voltage?

11. Claim 11 is indefinite where it specifies "*predetermined display driving voltage*" (see lines 10-12) since "*predetermined*," according to Applicants' definition, merely means determined beforehand. The use of "*predetermined*" has been held to be indefinite in a claim where it simply means determined beforehand, *Joseph E. Seagram & Sons, Inc. V. Marzall*, Comr. Pats., 84 USPQ 180 (Court of Appeals, District of Columbia).

12. Claims 3-5, 7-10, and 13-18 are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon rejected base claims.

Claim Rejections - 35 USC § 101

13. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

14. Claims 11, 13-16, and 18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claimed method for calibrating a display driving voltage appears to be comprised of abstract ideas (e.g., manipulating electrical signals and waveforms) rather than practical applications of ideas; they do not result in physical transformations; nor do they appear to provide useful, concrete and tangible results.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 1, 3-5, 7-11, and 13-18 are rejected under 35 U.S.C. 102(b) as being anticipated by *Devine (US 5,978,745 A)*.

Regarding claim 1, Devine discloses a display controller [Fig. 3; 104] for driving a monitor [Fig. 3; 302] comprising: a graphics chip [Fig. 3; 304] for outputting a display data (i.e., red, green, and blue video data); and a converter [Fig. 3; 310] for converting the display data into a display driving voltage (see Column 6, Lines 38-43 -- i.e., red, green, and blue voltage signals), the converter comprising: a current mirror circuit [Fig. 3; 320, 322, 324] (see Column 6, Lines

Art Unit: 2629

20-28) for generating an output current (i.e., present current) according to a reference current (i.e., target current) and the display data, the output current and the reference current corresponding to a mirror ratio, the output current being delivered to the monitor for generating the display driving voltage (see Column 5, Line 46 - Column 6, Line 43), the current mirror circuit comprising: a first current route [via Fig. 2; BCC 208] for delivering the reference current; and a plurality of second current routes [Fig. 3; 320, 322, 324] electrically connected to the first current route for delivering a plurality of mirror currents to an output port of the converter to form the output current (see Fig. 5; Column 6, Line 53 - Column 7, Line 43), wherein the plurality of mirror currents each have a different magnitude (see Fig. 5 -- wherein the mirror currents output by current mirror type samplers 320, 322 & 324 after-calibration will each have a different magnitude than before-calibration, for example), and the plurality of mirror currents add together to form the output current (see Fig. 3; Column 5, Line 46 - Column 6, Line 10 -- wherein the output signals of current mirror type samplers 320, 322 & 324 are all commonly received/combined/"added together" within CRT 302, for example); and a voltage calibration circuit [Fig. 3; 308] for modifying the mirror ratio according to the display driving voltage and a predetermined display driving voltage and adjusting (via gain) the output current to drive the display driving voltage to approach the predetermined display driving voltage (see Fig. 5; Column 6, Line 53 - Column 7, Line 43).

Regarding claim 3, Devine discloses the voltage calibration circuit comprises: a mirror ratio controller [Fig. 3; 310] for controlling the mirror ratio; a comparator [Fig. 5; 506, 512] for comparing the display driving voltage with the predetermined display driving voltage to generate

a comparison result [Fig. 5; delta]; and a state machine [Fig. 5] for generating a setting value [Fig. 5; 510, 516] according to the comparison result and outputting the setting value to the mirror ratio controller to adjust the mirror ratio (see Fig. 5; Column 6, Line 53 - Column 7, Line 43).

Regarding claim 4, Devine discloses the setting value is used for lowering the mirror ratio if the display driving voltage is greater than the predetermined display driving voltage [Fig. 5; 512, 514, 516], and the setting value is used for raising the mirror ratio if the display driving voltage is not greater than the predetermined display driving voltage [Fig. 5; 506, 508, 510] (see Column 6, Line 53 - Column 7, Line 43).

Regarding claim 5, Devine discloses the mirror ratio controller comprises a plurality of mirror ratio setting units [Fig. 3; 320, 322, 324], and the mirror ratio controller activates a predetermined amount of mirror ratio setting units according to the setting value for adjusting the mirror ratio (see Fig. 5; Column 6, Line 53 - Column 7, Line 43).

Regarding claim 7, Devine discloses the mirror ratio setting units correspond to a plurality of adjustment magnitudes (i.e., deltas and gains) when adjusting the mirror ratio (see Fig. 5; Column 6, Line 53 - Column 7, Line 43).

Regarding claim 8, Devine discloses each of the mirror ratio setting units is electrically connected to the first current route through a current mirror means (see Fig. 3; Column 5, Line 46 - Column 6, Line 43).

Regarding claim 9, Devine discloses the state machine enters a first operating state for adjusting the setting value to drive the mirror ratio controller to lower the mirror ratio if the comparison result corresponds to a first logic level [Fig. 5; 512, 514, 516], and the state machine enters a second operating state for adjusting the setting value to drive the mirror ratio controller to raise the mirror ratio if the comparison result corresponds to a second logic level [Fig. 5; 506, 508, 510] (see Column 6, Line 53 - Column 7, Line 43).

Regarding claim 10, Devine discloses the state machine will leave the first operating state and enter a third operating state [Fig. 5; 518] for holding the setting value if the state machine stays at the first operating state, and the comparison result corresponds to the second logic level, and the state machine will leave the second operating state and enter the third operating state for holding the setting value if the state machine stays at the second operating state, and the comparison result corresponds to the first logic level (see Column 6, Line 53 - Column 7, Line 43).

Regarding claim 11, this claim is rejected by the reasoning applied in rejecting claim 1.

Regarding claim 12, this claim is rejected by the reasoning applied in rejecting claims 1 and 2.

Regarding claim 13, this claim is rejected by the reasoning applied in rejecting claim 3.

Regarding claim 14, this claim is rejected by the reasoning applied in rejecting claim 4.

Regarding claim 15, this claim is rejected by the reasoning applied in rejecting claims 4 and 9.

Regarding claim 16, this claim is rejected by the reasoning applied in rejecting claim 10.

Regarding claim 17, Devine discloses the plurality of mirror currents have magnitudes differing from each other by a factor of two (e.g., see Column 5, Lines 23-26 -- wherein "2" is a factor of "100").

Regarding claim 18, this claim is rejected by the reasoning applied in rejecting claim 17.

Response to Arguments

17. Applicants' arguments filed 27 February 2007 have been fully considered but they are not persuasive.

The Applicants contend, "Devine [US 5,978,745 A] teaches in Fig. 3 that 'the plurality of second current routes' 320, 322, 324 correspond to current for red video data, green video data, and blue video data, respectively. Devine does not teach that each of the mirror currents 320, 322, 324 have a different magnitude, and that the plurality of mirror currents add together to form an output current. Instead, the RGB currents 320, 322, 324 are independent of one another, and are not added together to form an output current" (see Page 8 of the Amendment filed 27 February 2007). However, the examiner respectfully disagrees.

Firstly, as mentioned in the 35 U.S.C. 112, second paragraph type rejections of independent claims 1 and 11 above, this newly added subject matter neglects to definitively state what the mirror current magnitude is *different* from. As such, one having ordinary skill in the art would appreciate each mirror current magnitude is "different" from an almost limitless number of elements. For one example, the mirror currents output by Devine's current mirror type samplers 320, 322 & 324 post-calibration will each have a different magnitude than prior-to-calibration (see Fig. 5; Column 6, Line 66 - Column 7, Line 43). Moreover, Devine's current mirror type samplers [Fig. 3; 320, 322 & 324] each respectively outputs a red, green, and blue current signal. In normal operation, Devine's monitor [Fig. 3; 302] would display a wide variety of images (not just white), necessitating each red, green, and blue current signal magnitude being different from each other.

Secondly, the output signals of Devine's current mirror type samplers [Fig. 3; 320, 322 & 324] are all commonly received/combined/*added together* within the CRT monitor [Fig. 3; 302] (see Fig. 3; Column 5, Line 46 - Column 6, Line 10). Additionally, Devine states, "CRT 302 *preferably* includes separate red, green, and blue cathodes, which control the beam currents so

that a color picture may be displayed" (see Column 5, Lines 55-58). Thereby implicitly disclosing an alternate embodiment wherein CRT 302 includes a combined red/green/blue cathode, which controls the beam currents so that a monochrome picture may be displayed. Such would be the result of connecting a monochrome (instead of a color CRT) monitor to Devine's measuring circuit [Fig. 3; 304].

By such reasoning rejection of the claims is deemed necessary, proper, and thereby maintained at this time.

Conclusion

18. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeff Piziali/
Primary Examiner, Art Unit 2629
29 February 2008